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(54) **CONTENT SHARING AMONG MOBILE TERMINALS**

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USPC 455/450, 550.1, 556.2, 420–422.1
See application file for complete search history.

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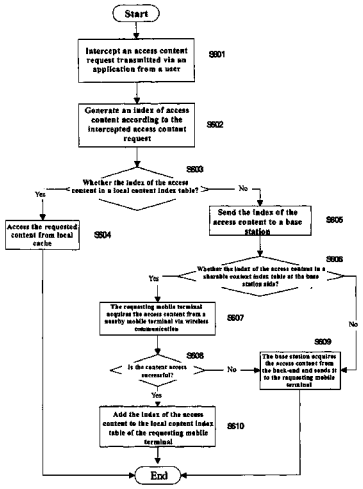
(57) **ABSTRACT**

A method for realizing content sharing among mobile terminals comprises: receiving an index of access content sent by a requesting mobile terminal; looking up a shareable content index table for the index of the access content; and sending identification information of a mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found, so that the requesting mobile terminal obtains the requested access content from the mobile terminal having the index of the access content via wireless communication.

16 Claims, 6 Drawing Sheets



(51) **Int. Cl.**

H04W 4/20	(2009.01)
H04L 29/08	(2006.01)
H04L 29/12	(2006.01)

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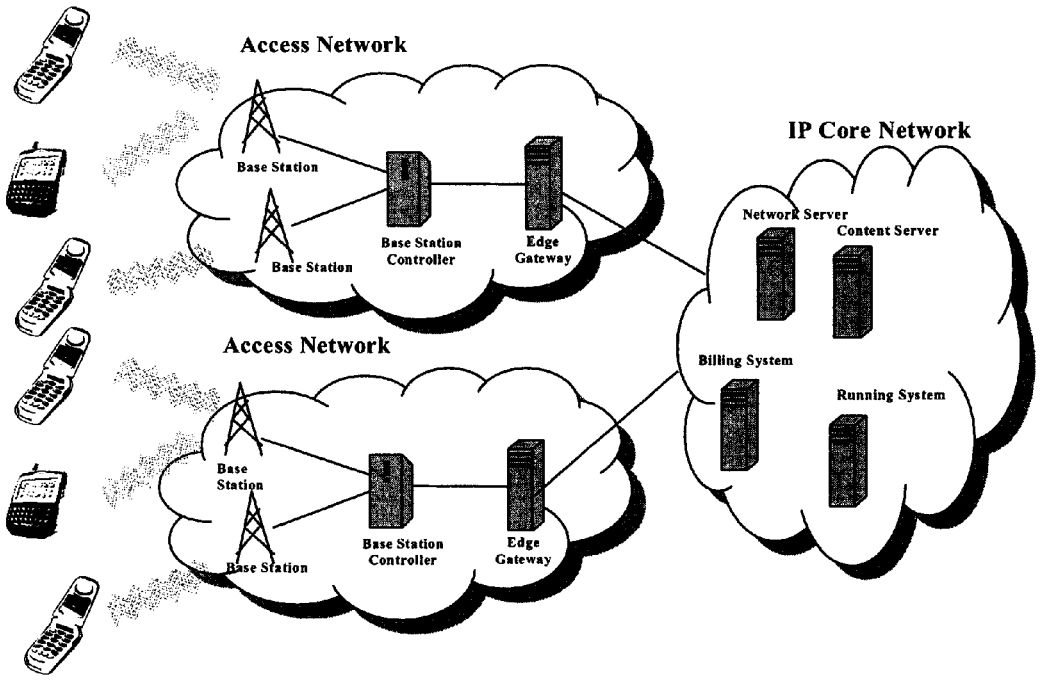
Access Network
Base Station
Base Station
Base Station Controller
Edge Gateway
Access Network
Base Station
Base Station
Base Station Controller
Edge Gateway
IP Core Network
Network Server
Content Server
Billing System
Running System

FIG.1

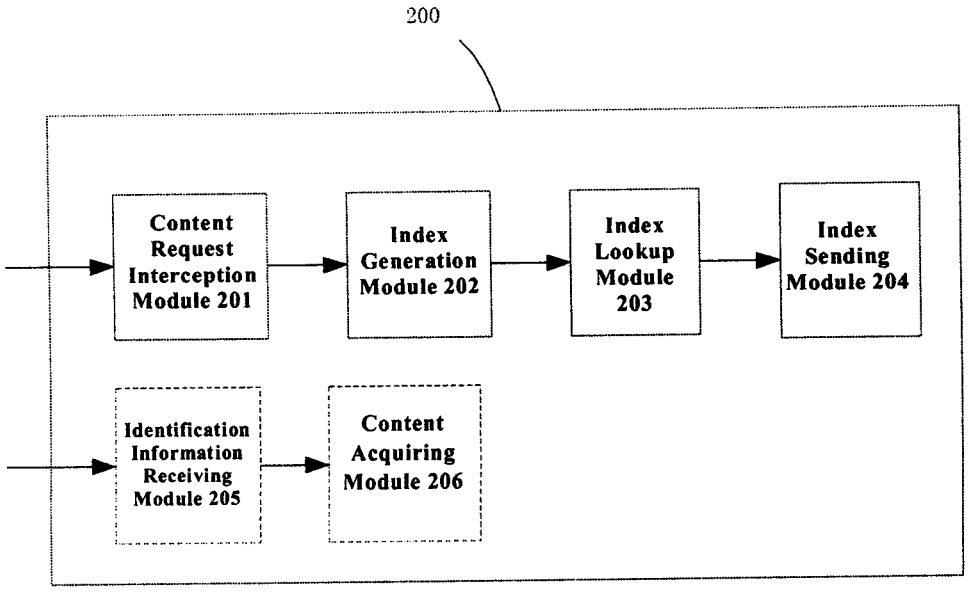
200
Content Request Interception Module 201
Index Generation Module 202
Index Lookup Module 203
Index Sending Module 204
Identification Information Receiving Module 205
Content Acquiring Module 206

FIG.2

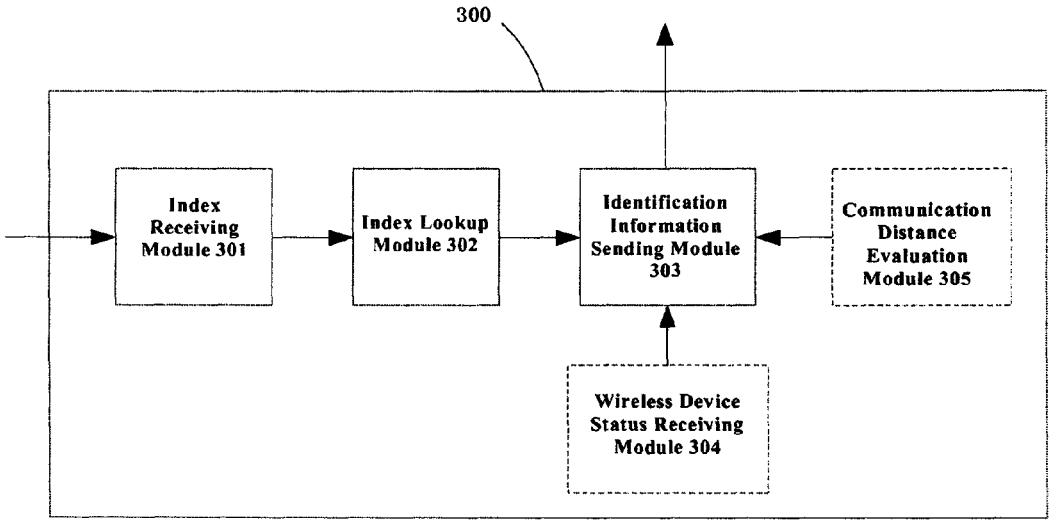
300
Index Receiving Module 301
Index Lookup Module 302
Identification Information Sending Module 303
Communication Distance Evaluation Module 305
Wireless Device Status Receiving Module 304

FIG.3

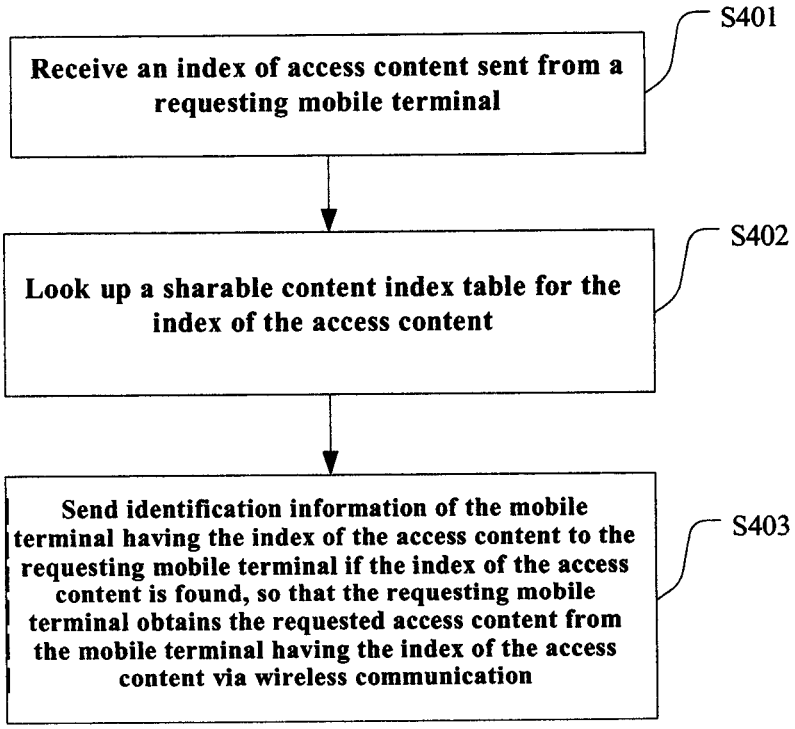
S401
Receive an index of access content sent from a requesting mobile terminal
S402
Look up a sharable content index table for the index of the access content
S403
Send identification information of the mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found, so that the requesting mobile terminal obtains the requested access content from the mobile terminal having the index of the access content via wireless communication

FIG.4

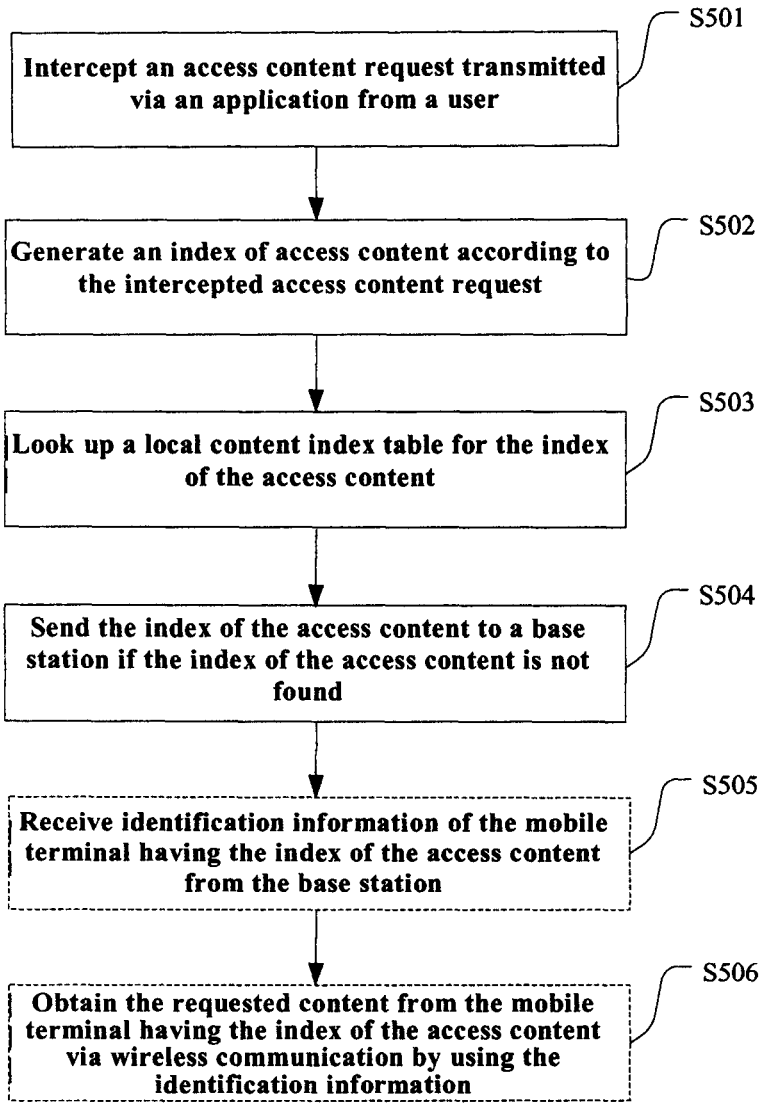
S501
Intercept an access content request transmitted via an application from a user
S502
Generate an index of access content according to the intercepted access content request
S503
Look up a local content index table for the index of the access content
S504
Send the index of the access content to a base station if the index of the access content is not found
S505
Receive identification information of the mobile terminal having the index of the access content from the base station
S506
Obtain the requested content from the mobile terminal having the index of the access content via wireless communication by using the identification information

FIG.5

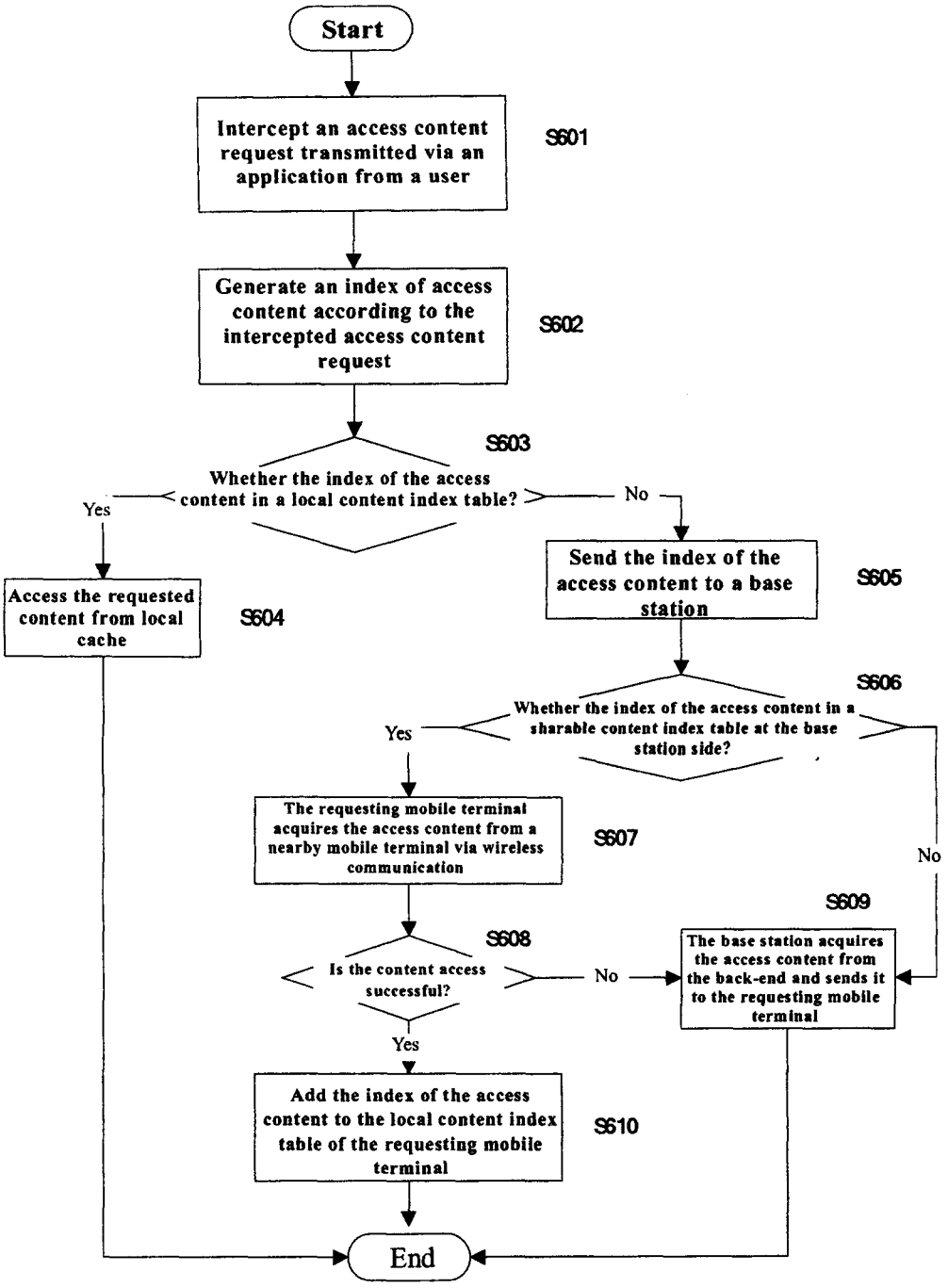
Start
Intercept an access content request transmitted via an application from a user
S601
Generate an index of access content according to the intercepted access content request
S602
S603
Whether the index of the access content in a local content index table?
Yes
No
Access the requested content from local cache
S604
Send the index of the access content to a base station
S605
S606
Whether the index of the access content in a sharable content index table at the base station side?
Yes
No
The requesting mobile terminal acquires the access content from a nearby mobile terminal via wireless communication
S607
S608
Is the content access successful?
No
Yes
S609
The base station acquires the access content from the back-end and sends it to the requesting mobile terminal
Add the index of the access content to the local content index table of the requesting mobile terminal
S610
End

FIG.6

CONTENT SHARING AMONG MOBILE TERMINALS

TECHNICAL FIELD

The present invention relates to mobile terminals, and more specifically, to a method and an apparatus for content sharing among mobile terminals.

BACKGROUND

Global mobile internet has entered into an explosively increasing stage. Till now the user number of China Mobile becomes more than half a billion. However, traditional telecommunication operators face a dilemma: 3G wireless data traffic is sharply increased, while a bandwidth bottleneck gradually emerges. Users also have increasing requirements for mobile data content services comprising digital multimedia content services and content services of websites. In order to make effort to satisfy such increasing requirements for mobile data content services from the users, networks and frequency spectrums of most operators run at full capacity.

FIG. **1** shows a schematic view of requesting to obtain content services by communication among mobile terminals and base stations in a cell in the prior art. In order to acquire data content services, a mobile user needs to communicate with a base station via an Air Interface. The "Air Interface" represents a wireless transmission specification between a base station and a mobile phone, and defines the use frequency and bandwidth of each wireless channel and the employed coding method. After receiving a request from a mobile terminal, the base station obtains content to which the mobile user requests to access from a network server and a content server in an IP core network via a wired network, and sends it to the mobile terminal through the Air Interface.

With the increasing of the number of mobile users, the wireless spectrum resources of the Air Interfaces are increasingly limited so that the quality of data content services obtained by the mobile users is degraded, and the user experience is deteriorated.

Thus, how to sufficiently increase the utilization of the spectrum in the case of current spectrum resources is very important and valuable for dealing with crisis of spectrum resources and enhancing the experiences of mobile users.

SUMMARY

Based on the above problems, the present invention provides a method and an apparatus for realizing content sharing among mobile terminals.

According to a first aspect of the present invention, a method for realizing content sharing among mobile terminals is provided, which comprises the steps of: receiving an index of access content sent by a requesting mobile terminal; looking up a shareable content index table for the index of the access content; and sending identification information of a mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found, so that the requesting mobile terminal obtains the requested access content from the mobile terminal having the index of the access content via wireless communication.

According to a second aspect of the present invention, a method for realizing content sharing among mobile terminals is provided, which comprises the steps of: intercepting an access content request transmitted via an application from a user; generating an index of access content according to the intercepted access content request; looking up local content index table for the index of the access content; and sending the index of the access content to a base station if the index of the access content is not found.

According to a third aspect of the present invention, an apparatus for realizing content sharing among mobile terminals is provided, which comprises: an index receiving module configured to receive an index of access content transmitted from a mobile terminal that requests to access content; an index lookup module configured to look up a shareable content index table for the index of the access content; and an identification information sending module configured to send identification information of a mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found, so that the requesting mobile terminal obtains the requested content from the mobile terminal having the index of the access content via wireless communication.

According to a fourth aspect of the present invention, an apparatus for realizing content sharing among mobile terminals, which comprises: a content request interception module configured to intercept an access content request transmitted via an application from a user; an index generation module configured to generate an index of access content according to the intercepted access content request; an index lookup module configured to look up a local content index table for the index of the access content; and an index sending module configured to send the index of the access content to a base station if the index of the access content is not found.

By using the coordinating ability of a base station, transmission and distribution of data content are coordinated among mobile terminals through personal local area networks, thereby saving the spectrum resources of Air Interface, and providing better user experiences to mobile users.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

FIG. **1** shows a schematic view of requesting to obtain content services by communication among mobile terminals and base stations in a cell in the prior art;

FIG. **2** shows a content sharing apparatus **200** introduced in a mobile terminal according to one embodiment of the present invention;

FIG. **3** shows an apparatus **300** for realizing content sharing among mobile terminals introduced at the base station side according to one embodiment of the present invention;

FIG. **4** shows a method for realizing content sharing among mobile terminals at the base station side according to an embodiment of the present invention;

FIG. **5** shows a method for realizing content sharing among mobile terminals at the mobile terminal side according to an embodiment of the present invention; and

FIG. **6** shows a flowchart of a method for realizing content sharing among mobile terminals according to an embodiment of the present invention.

DETAILED DESCRIPTION

Hereinafter, a method and a system for realizing content sharing among mobile terminals according to embodiments of the present invention are described in conjunction with the attached drawings, so that the objects and advantages of the present invention will be better understood.

The key idea of the present invention is as follows: in crowded places such as subway, office building, a large num-

ber of mobile phone users acquire information through mobile phones anywhere anytime; when a mobile user requests to enjoy a surfing service or a content service of digital multimedia through a mobile terminal, the base station does not need to acquire digital content from the back-end by the Air Interface, instead, the base station queries, in a shareable content index table maintained by the base station, whether other mobile terminal that can provide the content service in a manner of wireless communication exists; if such a mobile terminal exists, identification information of the mobile terminal satisfying the requirement is sent to the mobile user, and the mobile user further acquires the requested content from the other mobile terminal via wireless communication, thereby saving frequency resources of Air Interface.

FIG. **2** shows a content sharing apparatus **200** introduced in a mobile terminal according to one embodiment of the present invention, which comprises a content request interception module **201** configured to intercept an access content request transmitted via an application from a user, an index generation module **202** configured to generate an index of the access content according to the received access content request, an index lookup module **203** configured to look up the local content index table for the index of the access content, and an index sending module **204** configured to send the index of the access content to a base station if the index of the access content is not found.

The content sharing apparatus according to the embodiment of the present invention can interface with various applications such as browser, multimedia player or the like. A user inputs a content request through an application of a mobile terminal According to one embodiment of the present invention, the user requests to access a webpage by inputting a Unified Resource Locator (URL) through a browser. The content request interception module **201** intercepts the URL transmitted through the application by the user, and the content index generation module **202** generates an index uniquely identifying the URL according to the received URL. According to one embodiment of the present invention, the index uniquely identifying the URL can be generated by using a Hash function. The index lookup module **203** looks up the local content index table for the index of the URL. Each of the mobile terminals that participating in the content sharing service maintains a content index table locally, for recording the indexes generated according to the local cached contents. If the index of the URL is found in the local content index table, the content in the local cache, which is identified by the index, is directly accessed. If the index of the URL is not found in the local content index table, the index sending module **204** sends the index to a base station through Air Interface. The index can be transmitted by GPRS protocol for GSM, or by CDMA for 3G.

Further, the content sharing apparatus **200** according to the embodiment of the present invention further includes an identification information receiving module **205** configured to receive identification information of a mobile terminal having the index of the access content from a base station, and a content acquiring module **206** configured to obtain the requested content from the mobile terminal having the index of the access content via wireless communication using the identification information.

The identification information receiving module **205** receives the identification information of the mobile terminal having the index from a base station, and the content acquiring module **206** is configured to obtain the requested content from the mobile terminal having the index of the access content via wireless communication, such as accessing a nearby mobile terminal via bluetooth, by using the identification information. The content sharing apparatus of mobile terminal according to the embodiment of the present invention can be implemented in the mobile terminal in the form of a plug-in, or can be integrated into the mobile terminal as an independent software module. The content sharing apparatus is transparent not only with respect to the applications in an upper layer, but also with respect to the transmission layer and the physical layer in a lower layer, without the need to change the existing hardware configuration and transmission protocols. The content acquiring module **206** is further configured to add the index of the access content to the local content index table.

The content sharing apparatus **200** of the embodiment of the present invention further includes a wireless status reporting module configured to periodically report a wireless apparatus status, including at least power consumption status and load status, of the mobile terminal to a base station.

Corresponding to the content sharing apparatus of the mobile terminal, FIG. **3** shows an apparatus **300** for realizing content sharing among mobile terminals introduced at the base station side according to one embodiment of the present invention, which includes an index receiving module **301** configured to receive the index of access content transmitted from a requesting mobile terminal, an index lookup module **302** configured to look up a shareable content index table for the index of the access content, and an identification information sending module **303** configured to send identification information of the mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found, so that the requesting mobile terminal obtains the requested access content from the mobile terminal having the index of the access content via wireless communication. The apparatus for content sharing among mobile terminals at a base side can be implemented in the form of a plug-in, or be integrated into the base station as an independent software module.

If a mobile terminal in a cell requests to access content such as webpage, multimedia or the like through a browser, a multimedia player or the like, the mobile terminal generates an index of access content according to the content access request transmitted via an application by the user, and transmits the index of access content to a base station via Air Interface, which is received by the index receiving module **301** of the apparatus for realizing content sharing among mobile terminals at the base station side.

According to one embodiment of the present invention, the index receiving module **301** is further configured to periodically receive indexes of local cache content reported from mobile terminals in the cell, and to combine the received indexes of local cache content to generate a shareable content index table. The base station is responsible for maintaining the shareable content index table, including timely adding or deleting indexes of local cache contents of mobile terminals recorded in the shareable content index table, according to the indexes of local cache content lastly reported from the mobile terminals.

The index lookup module **302** is used to look up the shareable content index table for the index of access content. If the index of the access content is not found, the base station acquires content from the existing communication links, that is, to link to a mobile switch or a data switching device such as SGGN, PDSN or the like via a wire or wireless manner so as to enter into the back-bone network of the operator, and then link to Internet through a gateway of the operator. If the index of the access content is found, identification informa-

tion of nearby mobile terminals having the index of the access content is sent to the mobile terminal.

According to one embodiment of the present invention, a wireless device status receiving module **304** is further included, which is configured to receive wireless device status, including whether Bluetooth or infrared data transmission is supported, power consumption and load, reported from mobile terminals in the cell. The identification information sending module **303** is further configured to query the wireless device status of the mobile terminal having the index of the access content if the index of the access content is found, and to send identification information of the mobile terminal whose wireless device status satisfies requirements of wireless communication, to the requesting mobile terminal. According to one embodiment of the present invention, the wireless device status receiving module **304** is further configured to periodically receive power consumption status reported from mobile terminals in the cell, wherein the power consumption status can include total electricity amount, remaining electricity amount of the power source and transmitting power. The identification information sending module **303** is further configured to decide whether the power consumption status of the mobile terminals having the index of the access content satisfies power consumption requirement for wirelessly communicating with the requesting mobile terminal if the index of the access content is found, and if the power consumption status of the mobile terminal having the index of the access content does not satisfy the power consumption requirement for wirelessly communicating with the requesting mobile terminal, the access content requested by the requesting mobile terminal is still acquired through existing communication links. If the power consumption status of the mobile terminal having the index of the access content can satisfy the power consumption requirement for wirelessly communicating with the requesting mobile terminal, the identification information of the mobile terminal having the index of the access content is sent to the requesting mobile terminal.

According to one embodiment of the present invention, the wireless device status receiving module **304** is further configured to periodically receive load status, including status in which content sharing services are currently provided to other mobile terminals, reported from mobile terminals in the cell. The identification information sending module **303** is further configured to query load status of the mobile terminals having the index of the access content in a current time period if the index of the access content is found, determine the mobile terminal having the index of the access content and having a relatively lower load in the current time period, and send the identification information of the mobile terminal having the index of the access content and having a relatively lower load to the requesting mobile terminal.

According to one embodiment of the present invention, a communication distance evaluation module **305** is further included, which is configured to evaluate whether a distance between the mobile terminal having the index of the access content and the requesting mobile terminal satisfies the distance requirement for wireless communication, if the index of the access content is found. According to one embodiment of the present invention, position information such as longitude and latitude coordinates of the mobile terminal having the index of the access content and the requesting mobile terminal are to be acquired at first, and then the distance between the mobile terminal having the index of the access content and the requesting mobile terminal is calculated by using the acquired position information, to further evaluate whether the distance between the mobile terminal having the index of the access content and the requesting mobile terminal satisfies the distance requirement for wireless communication. For example, the communication distance via Bluetooth needs to be within 10 m, and the communication distance via infrared ray needs to be 0-1 m. If the distance between the mobile terminal having the index of the access content and the requesting mobile terminal does not satisfy the distance requirement for wireless communication, the base station still obtains access content requested by the requesting mobile terminal via the existing communication links. If the distance between the mobile terminal having the index of the access content and the requesting mobile terminal satisfies the distance requirement for wireless communication, the identification information sending module **303** send the identification information of the mobile terminal having the index of the access content and satisfying the distance requirement, to the requesting mobile terminal. The mobile terminal requesting to access content further obtains the requested access content from the mobile terminal having the index of the access content by wireless communication means such as Bluetooth.

Based on the same inventive concept, the present invention proposes a method for realizing content sharing among mobile terminals at the base station side. FIG. **4** shows a method for realizing content sharing among mobile terminals at the base station side according to an embodiment of the present invention, the method includes: at step S**401**, receiving an index of access content sent from a requesting mobile terminal; at step S**402**, looking up the shareable content index table for the index of the access content; and at step S**403**, sending identification information of the mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found, so that the requesting mobile terminal obtains the requested access content from the mobile terminal having the index of the access content via wireless communication.

The method according to the embodiment of the present invention further includes periodically receiving indexes of local cache content reported from mobile terminals in a cell, and combining the received indexes of local cache content to generate a shareable content index table.

According to one embodiment of the present invention, the method further includes receiving wireless device status reported from mobile terminals in the cell. The step of sending identification information of the mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found further includes: querying wireless device status of the mobile terminals having the index of the access content if the index of the access content is found; and sending the identification information of the mobile terminal whose wireless device status satisfies requirement for wireless communication, to the requesting mobile terminal.

According to one embodiment of the present invention, the step of receiving wireless device status reported from mobile terminals in the cell further includes: periodically receiving power consumption status reported from mobile terminals in the cell. The step of sending identification information of the mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found further includes: evaluating whether power consumption status of the mobile terminal having the index of the access content satisfies power consumption requirement for wirelessly communicating with the requesting mobile terminal if the index of the access content is found; and sending identification information of the mobile terminal having the

index of the access content and satisfying the power consumption requirement, to the requesting mobile terminal.

According to one embodiment of the present invention, the step of receiving wireless device status reported from mobile terminals in the cell further includes: periodically receiving load status reported from mobile terminals in the cell. The step of sending identification information of the mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found further includes: querying load status of the mobile terminals having the index of the access content in a current time period if the index of the access content is found; determining the mobile terminal having the index of the access content and having a relatively lower load in the current time period; and sending identification information of the mobile terminal having the index of the access content and having a relatively lower load to the requesting mobile terminal.

According to one embodiment of the present invention, if the index of the access content is found, it is evaluated whether the distance between the mobile terminal having the index of the access content and the requesting mobile terminal satisfies the distance requirement for wireless communication; and identification information of the mobile terminal having the index of the access content and satisfying the distance requirement is sent to the requesting mobile terminal.

Corresponding to the above method for realizing content sharing among mobile terminals at the base station side, FIG. **5** shows a method for realizing content sharing among mobile terminals at the mobile terminal side according to an embodiment of the present invention, the method includes the steps of: intercepting an access content request transmitted via an application from a user at step S**501**; generating an index of access content according to the intercepted access content request at step S**502**; looking up local content index table for the index of the access content at step S**503**; and sending the index of the access content to a base station if the index of the access content is not found, at step S**504**.

According to the above description on the base station side, if looking up the shareable content index tables maintained at the base station side for the index of the access content, the method at the mobile terminal further includes: receiving identification information of the mobile terminal having the index of the access content from the base station at step S**505**; and obtaining the requested content from the mobile terminal having the index of the access content via wireless communication by using the identification information at step S**506**.

In the method according to the embodiment of the present invention, the step of obtaining the requested content from the mobile terminal having the index of the access content via wireless communication by using the identification information further includes: adding the index of the access content to the local content index table.

The method according to the embodiment of the present invention further includes: periodically reporting wireless device status of mobile terminal to the base station, wherein the wireless device status includes at least one of power consumption status and load status.

FIG. **6** shows a flowchart of a method for realizing content sharing among mobile terminals according to one embodiment of the present invention. At step S**601**, a content request interception module interfaced with an application is provided in the mobile terminal, to intercept an access content request transmitted through the application from a user. At step S**602**, an index of access content is generated according to the intercepted access content request. At step S**603**, it is determined whether the index of the access content is found in local content index table of the mobile terminal. If the judging result is "Yes", the mobile terminal accesses the requested content from local cache at step S**604**, and the process ends; and if the judging result is "No", the mobile terminal sends the index of the access content to a base station at step S**605**. It is determined whether the index of the access content is found in the shareable content index table at the base station side at step S**606**, and if the judging result is "No", the base station acquires the access content from the back-end via wired communication, and sends it to the mobile terminal that requests the access content, via Air Interface, at step S**609**, and the process ends. If the judging result is "Yes", the mobile terminal acquires the requested access content from a nearby mobile terminal having the index of the access content provided by the base station via short distance wireless communication at step S**607**. It is determined whether the content access succeeds at step S**608**, and if the judging result is "No", the base station acquires the access content from the back-end via wired communication, and sends it to the mobile terminal via Air Interface at step S**609**, and the process ends. If the judging result is "Yes", the index of the access content is added into the local content index table at step S**610**, and the process ends.

As for a telecommunication operator, many ways can be adopted to encourage mobile users to participate in a content sharing service, for example, the times for a mobile terminal to provide content sharing is accumulated as points, and the communication fee can be reduced to different extents according to the accumulated times.

It should be understood that at least some aspects of the present invention can be alternatively realized in program product. Programs defining the functions regarding the present invention can be transmitted to a data storage system or a computer system via various signal carrying medium including, but not limited to, unwritable storage medium (such as CD-ROM), writable storage medium (such as soft disk, hard disk driver, read/write CD ROM, optical medium), and communication medium such as computer including Ethernet and telephone network. Thus, it should be understood that such signal carrying medium can represent alternate embodiments of the present invention whey they carry or are encoded with computer readable instructions of managing method functions in the present invention. The present invention can be realized in hardware, software, firmware or a combination thereof. The present invention can be realized in a computer system in a concentrated way or in a distributed way in which different parts are distributed in several interconnected computer systems. Any computer system or other apparatus suitable for performing the methods described in the specification. Preferably, the present invention is realized in a manner of a combination of computer software and general computer hardware. In such a realizing manner, when the computer program is loaded and carried out, the computer system is controlled to perform the methods of the present invention or to constitute the system of the present invention.

The description of preferred embodiments of the present invention is given as above for purposes of illustration. The above explanations of preferred embodiments are not exhaustive, and are not intended to be limited to the present invention in the specific form disclosed, and obviously, many modifications and variations are possible in view of the above teaching. Such modifications and variations which are apparent to those of ordinary skill in the art are included in the scope of the present invention defined by the appended claims.

The invention claimed is:

1. A method for realizing content sharing among mobile terminals, comprising the steps of:

receiving an index of access content sent by a requesting mobile terminal;

looking up a shareable content index table for the index of the access content; and

for each mobile terminals having the index of the access content found,

receiving a wireless device status of the mobile terminals in the cell having the index of the access content, said receiving including receiving a power consumption status reported from the mobile terminals in the cell;

judging whether said power consumption status of the mobile terminals having the index of the access content satisfies a power consumption requirement for wirelessly communicating with the requesting mobile terminal if the index of the access content is found; and

sending identification information of a mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found and if the wireless device power consumption status of the mobile terminals having the index satisfies the power consumption requirement for wireless communication of the requested access content to the requesting mobile terminal, so that the requesting mobile terminal obtains the requested access content from the mobile terminals having the index of the access content via wireless communication.

2. The method according to claim **1**, further comprising:

periodically receiving indexes of local cache content reported from the mobile terminals in a cell; and

combining the received indexes of local cache content to generate the shareable content index table.

3. The method according to claim **1**, further comprising:

determining the wireless device status of the mobile terminals by

querying the wireless device status of the mobile terminals having the index of the access content if the index of the access content is found.

4. The method according to claim **3**, wherein said determining the wireless device status of the mobile terminals comprises:

judging whether the distance between the mobile terminal having the index of the access content and the mobile terminal requesting to access content satisfies the distance requirement for wireless communication if the index of the access content is found; and

sending identification information of the mobile terminal having the index of the access content and satisfying the distance requirement to the requesting mobile terminal.

5. The method according to claim **3**, further comprising:

periodically receiving said power consumption status reported from mobile terminals in the cell.

6. The method according to claim **3**, wherein receiving wireless device status reported from the mobile terminals in the cell further comprising:

periodically receiving load status reported from mobile terminals in the cell.

7. The method according to claim **6**, further comprising:

determining the wireless device status of the mobile terminals by

querying the mobile terminal to obtain a load status of the mobile terminal having the index of the access content in a current time period if the index of the access content is found;

determining the mobile terminal having the index of the access content and having a relatively lower load in the current time period; and

sending identification information of the mobile terminal having the index of the access content and having a relatively lower load to the requesting mobile terminal.

8. A method for realizing content sharing among mobile terminals, comprising the steps of:

intercepting an access content request transmitted via an application running on a mobile terminal from a user;

generating, at the mobile terminal, an index of access content according to the intercepted access content request;

looking up a local content index table provided in said mobile terminal for the index of the access content;

sending the index of the access content to a base station if the index of the access content is not found in the local content index table; and

receiving at said base station, a wireless device status of the mobile terminals having the index of the access content, said status comprising a power consumption status reported from the mobile terminals in the cell, and

judge whether said power consumption status of the mobile terminals having the index of the access content satisfies a power consumption requirement for wirelessly communicating with the requesting mobile terminal if the index of the access content is found.

9. The method according to claim **8**, further comprising:

receiving identification information of the mobile terminal having the index of the access content from the base station; and

obtaining the requested content from the mobile terminal having the index of the access content via wireless communication by using the identification information.

10. The method according to claim **9**,

wherein obtaining the requested content from the mobile terminal having the index of the access content via the wireless communication by using the identification information further comprising:

adding the index of the access content to the local content index table.

11. An apparatus for realizing content sharing among mobile terminals, comprising:

a memory storage device:

a hardware processor in communication with said memory storage device, said hardware processor configured to perform a method to:

receive an index of access content transmitted from a mobile terminal that requests to access content;

look up a shareable content index table for the index of the access content;

receive status information of each mobile terminals having the index of the access content found, and to determine a wireless device status of the mobile terminals having the index of the access content, said status information comprising a power consumption status reported from the mobile terminals in the cell;

judge whether the power consumption status of the mobile terminals having the index of the access content satisfies the power consumption requirement for wirelessly communicating with the requesting mobile terminal if the index of the access content is found; and

send identification information of a mobile terminal having the index of the access content to the requesting mobile terminal if the index of the access content is found and if the wireless device status of the mobile terminals having the index satisfies the power consumption requirement for wireless communication of the requested access content to the requesting mobile terminal, so that the requesting mobile terminal obtains the requested con-

tent from the mobile terminals having the index of the access content via wireless communication.

12. The apparatus according to claim **11**,

wherein said hardware processor is further configured to:

query the mobile terminals for the wireless device status information having the index of the access content if the index of the access content is found, and send identification information of a mobile terminal whose wireless device status satisfies a requirement for wireless communication to the requesting mobile terminal.

13. The apparatus according to claim **11**, wherein to determine the wireless device status of the mobile terminals having the index of the access content, said hardware processor is further configured to:

judge whether the distance between the mobile terminal having the index of the access content and the mobile terminal requesting to access content satisfies the distance requirement for wireless communication if the index of the access content is found, wherein said hardware processor is configured to send the identification information of the mobile terminal having the index of the access content and satisfying the distance requirement to the requesting mobile terminal.

14. The apparatus according to claim **11**, wherein to determine a wireless device status of the mobile terminals having the index of the access content, said hardware processor is further configured to:

receive a load status reported from mobile terminals in the cell; and

determine a mobile terminal having the index of the access content and having a relatively lower load in a current time period, wherein said hardware processor is configured to send the identification information of the mobile terminal having the index of the access content and having a relatively lower load to the requesting mobile terminal.

15. An apparatus for realizing content sharing among mobile terminals, comprising:

a memory storage device;

a hardware processor in communication with said memory storage device, said hardware processor configured to perform a method to:

intercept an access content request transmitted via an application running on a mobile terminal from a user;

generate, at the mobile terminal, an index of access content according to the intercepted access content request;

look up a local content index table provided in said mobile terminal for the index of the access content;

send the index of the access content to a base station if the index of the access content is not found in the local content index table, and

report wireless device status of the mobile terminals to the base station, said status comprising a power consumption status reported from the mobile terminals in the cell, and

judge whether said power consumption status of the mobile terminals having the index of the access content satisfies a power consumption requirement for wirelessly communicating with the requesting mobile terminal if the index of the access content is found.

16. The apparatus according to claim **15**, wherein said hardware processor is further configured to:

receive identification information of the mobile terminal having the index of the access content from the base station; and

obtain the requested content from the mobile terminal having the index of the access content via wireless communication by using the identification information.

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